HASANUDDIN UNIVERSITY

Agricultural Engineering
Bachelor Program

2023
MODULE
DESCRIPTION

**BACHELOR PROGRAM
AGRICULTURAL ENGINEERING
FACULTY OF AGRICULTURE
HASANUDDIN UNIVERSITY
2023**

Numerical Analysis

Semester 6

Module designation	*Numerical Analysis*
Semester(s) in which the module is taught	*VI*
Person responsible for the module	*Dr. Ir. Mahmud, MP.* *Prof. Dr. Ir. Salengke,M.Sc.* *Dr. Suhardi, STP., MP*
Language	*Indonesia*
Relation to curriculum	*Compulsory*
Teaching methods	*Lecture*
Workload (incl. contact hours, self-study hours)	*(2 SKS x 1.7 = 3.4 ECTS = 91.8 hours* • *Lecture = 23.3 hours* • *Excercise = 28 hours* • *Sel study = 28 hours* • *Exam = 4 hours (MID term and final)* • *Exam preparation = 8.5 hours*
Credit points	*2 SKS = 3.4 ECTS*
Required and recommended prerequisites for joining the module	*Applied Statistics*
Module objectives/intended learning outcomes	*ILO 3: Apply knowledge of mathematics, sciences, and engineering principles in agricultural fields; (Knowledge 1)* *ILO 4: Use quantitative analysis, information technology and critical thinking in agricultural engineering profession; (Knowledge 2)* *ILO 5: Use techniques, skills, and modern tools necessary for agricultural engineering practices; (Skill 1)* *ILO 9: Analyze the impact of engineering solutions to the environment and society using a multidisciplinary approach; (Competence 3)*
Content	*This course covers introduction to computer programming and software, Gauss-Jordan elimination and LU factorization, root of equations, regression techniques, interpolation techniques, numerical integration and numerical differentiation. Some numerical cases related to agricultural engineering.*
Examination forms	*Writing*
Study and examination requirements	*Attendance above 80%*
Reading list	*Chapra, SC., RP. Canale, 2015. Numerical Methods for Engineers, 7th Edition, McGraw-Hill Higher Education, New York.*